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Not having been able to obtain a specimen of the South American genus *Thamnophilus* to dissect, it is of course merely conjecture, when I state that I believe the anatomy of that genus will be found to approach very nearly to that of *Psophodes*; referring to the external characters, although the bill differs much in form, the nature of the plumage and the form of the tail and wings are very similar.

Craticus Tibicen, Vieill.

Trachea, muscles of voice, tongue, and œsophagus as among the *Corvidæ* generally. Intestinal canal of moderate length; cæca scarcely more than rudimentary; cloaca large; gizzard of moderate size, oval, flattened, muscular, interior surface (epithelium) hardened, transversely rugose, filled with the remains of insects.

Length of œsophagus	4 inches.
Length of rectum	$\frac{3}{4}$ "
Length of intestine	20 "
Length of cæca	$\frac{1}{4}$ "

The skeleton of *Craticus Tibicen*, like the soft portions, does not differ materially from the general structure found among the *Corvidæ*; the scapula, however, is rather broader near the hinder extremity than in the middle, and the sternum proportionably larger than in any other *Corvidæ* with which I have had an opportunity of comparing it. The number of the vertebræ are

Cer. 12; Dor. 8; Sac. 12; Caud. 8; Ribs 8, 5 true, 3 false.

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1st. The oval or oval-cylindrical young escape from the eggs contained in the ovaria provided with vibratile cilia: on the eggs are observed the *Vesicula Purkinji* and the *Macula (Vesicula) Wagneri*; the yolk exhibits the usual partitions or furcations. The young collect in the cotemporaneously developed marsupial pouches appended to the four oval tentacula.

2nd. They soon quit the mother, and swim, like Infusoria, about for a time, at last adhere to some foreign body, to which they fix themselves with their unbranched end; at the other free end a mouth opens, around which a circle of tentacula is gradually formed.

3rd. In this polypoid condition, which may fairly be termed a larva state, they already multiply, and indeed in the usual manner of Polypes, by means of buds and so-called stolones. The new animals thus produced resemble perfectly the larva.

4th. Lastly, after the lapse of a still undetermined time, the larva voluntarily divides into a number of diagonal pieces, all of which become new animals. These do not resemble the larva, but are discoid creatures, which swim about freely; their periphery is divided into eight rays, bipartite at the extremity; and they have a quadrangular, tubular, pendent mouth. Gradually, as they grow, the rays become shorter, the spaces between them where the marginal tentacula issue forth grow larger, the mouth divides and changes into four oral tentacula—in short, these animals become perfectly identical with the original mother (the *Medusa* or the *Cyanea*). It is, therefore, not the larva or the individual developed from the egg which is converted into a perfect *Acalepha*, but its progeny, originated

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The author observes in conclusion, that Graham Dalyell's observations ('Edinb. Philos. Journ.' vol. xxi. 1836), with which he was only partially acquainted from what had appeared in Wiegmann's 'Archiv' and the 'Isis,' may serve in part to confirm his observations. "His (Dalyell's) *Hydra Tuba* appears to be the above-described poly-poid *Acalepha*-larva, on which he also noticed buds; he moreover observed the diagonal separation by which the radiated *Acalephæ* (*Strobila*) originate. Of these latter he has figured one with eleven and one with eight rays; in general I have found eight. The quadrangular column, of which Dalyell incorrectly asserts that it projects on the convex side, is the pendent mouth, at the base of which four organs are mentioned by him (the fold-circles with their tentacula). But in the explanation of the observed phenomena, his views differ from mine. In February and March," he says, "the surface or disc of some *Hydræ* are furnished with a pendent flexible prolongation of an inverted conical form, &c., which is developed into 20 to 30 layers, which gradually separate and become free *Acalephæ*. But whence this prolongation arises, and in what connexion it stands with the *Hydra*, he does not state. One might almost be inclined to think that he ascribes to the polype viviparity. According to my observations, it is the animal itself, the polypoid larva, which separates into diagonal pieces, beginning above and gradually descending towards the base. How the tentacula of the polype disappear, and after all the diagonal pieces have become free, what becomes of the lower part of the stalk, I have, it is true, not yet been able to see. That the polype again fixes itself, as Dalyell maintains, after the disappearance of the prolongation, acquires new tentacula, and again adopts its former form, is opposed entirely to my observations, and appears to be founded upon an erroneously conceived observation." This paper is accompanied by 4 plates containing 64 figures.

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I. PEDIMANA. Digiti anteriores longissimi, pedes posteriores pollice instructi ; cranium rotundatum, orbitæ postice clausæ.

Only one genus belongs here, *Cheiromys*. Hab. Madagascar.

II. SCIURINA. Pedes anteriores digitis 4 et verruca hallucari, posteriores 5-dactyli, cauda dense pilosa ; dentes molares $\frac{5}{4}$; ossa frontalia dilatata, processu postorbitali distincto instructa ; foramen infraorbitale angustissimum.

Genera : *Sciurus*, *Pteromys*, *Tamias*, *Spermophilus*, *Arctomys*.

This family is represented in all parts of the world with the exception of New Holland.

III. MYOXINA. Pedes anteriores digitis 4 et verruca hallucari, posteriores 5-dactyli, cauda elongata villosa ; dentes molares $\frac{4}{4}$, ossa frontalia valde coarctata, processu postorbitali privata ; intestinum cæcum nullum.

M. Wagner has separated the only genus of which this family consists into the four sub-genera, *Graphiurus*, *Eliomys*, *Glis* and *Muscardinus*. Geographical distribution confined to the Old World.

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6. 'Contributions to a systematical knowledge of the Larvæ of Insects,' by Dr. Erichson. 1st part : The Larvæ of the Coleoptera.

7. 'Grouping of the Genera of the Rodentia into Natural Families, with descriptions of some new Genera and Species,' by Prof. A. Wagner. The first part of this paper consists of a review of the literature on this subject, in which great praise is bestowed on the labours of Mr. Waterhouse*, to whose classification, however, it is objected, that not all families are reduced to their proper limits, and that some have been discarded which must be re-established. The author divides the Rodentia into twelve families, founded not merely on external habits, but chiefly on the structure of the skeleton and the dentition ; in some cases the intestines have likewise been consulted.

I. PEDIMANA. Digiti anteriores longissimi, pedes posteriores pollice instructi ; cranium rotundatum, orbitæ postice clausæ.

Only one genus belongs here, *Cheiromys*. Hab. Madagascar.

II. SCIURINA. Pedes anteriores digitis 4 et verruca hallucari, posteriores 5-dactyli, cauda dense pilosa ; dentes molares $\frac{5}{4}$; ossa frontalia dilatata, processu postorbitali distincto instructa ; foramen infraorbitale angustissimum.

Genera : *Sciurus*, *Pteromys*, *Tamias*, *Spermophilus*, *Arctomys*.

This family is represented in all parts of the world with the exception of New Holland.

III. MYOXINA. Pedes anteriores digitis 4 et verruca hallucari, posteriores 5-dactyli, cauda elongata villosa ; dentes molares $\frac{4}{4}$, ossa frontalia valde coarctata, processu postorbitali privata ; intestinum cæcum nullum.

M. Wagner has separated the only genus of which this family consists into the four sub-genera, *Graphiurus*, *Eliomys*, *Glis* and *Muscardinus*. Geographical distribution confined to the Old World.

* Mr. Waterhouse's paper, 'Observations on the Rodentia,' &c. Mag. Nat. Hist. 1839, pp. 90, 184, 274 and 593 ; and 'On the geographical distribution of the Rodentia,' Annals of Nat. Hist. No. 33. (1840) p. 418 ; and Proc. Zool. Soc. for Nov. 1839 ; see also 'Observations on the skulls of the *Caviidæ* and *Chinchillidæ*,' Proc. Zool. Soc., April 1839, and 'Observations on various Rodents in the Zoology of the Voyage of the Beagle.'

IV. MACROPODA. Artus distincte saltatorii, anteriores brevissimi, posteriores longissimi; cauda longa pilosa; foramen infraorbitale magnum.

The four genera belonging here are divided into two sections.

a. Dentes molares irregulariter incisi.

Dipus; *Scirtites*, mihi (*Alactaga*, Fr. Cuv.); *Jaculus*, Wagl.

b. Dentes molares ab uno latere partiti. (*Meriones*, F. Cuv.) *Pedetes*.

Geog. distrib. Over Asia and a small part of European Russia, Africa, Northern America, and one occurs on New Holland.

V. CHINCHILLINA. Auriculæ magnæ; scelides antipedibus subduplo longiores; cauda producta, supra et ad apicem longius setosa; vellus molle; dentes molares $\frac{4}{4}$ e laminis 2-3 parallelis compositi.

Three genera: *Eriomys* (*Chinchilla*), *Lagidium* (*Lagotis*), *Lagostomus*.

Geog. distrib. South America.

VI. PSAMMORYCTINA. Habitus murinus, artus proportionales, auriculæ mediocres (rarius magnæ), foramen infraorbitale magnum, mandibulæ angulus in cuspidem elongatum excurrans, dentes molares $\frac{4}{4}$.

a. *Habrocoma*.

Octodon.

Psammoryctes.

β. *Capromys*.

Aulacodus.

Loncheres.

(*Nelomys* and *Echimys*.)

Cercomys.

Dactylomys.

Petromys.

Confined principally to South America.

VII. CUNICULARIA. Corpus crassum, cylindraceum, caput obtusum, oculi minuti aut tecti, auricula et cauda nullæ aut parvæ, artus anteriores posterioribus robustiores, pedes 5-dactyli, dentes primores exserti, lati, truncati.

a. Ungues anteriores breves.

Ommatostergus.

Spalax.

Chtonoergus.

Rhizomys.

Georhycus.

Ctenomys.

β. Ungues anteriores longissimi.

Siphneus.

Ascomys.

Thomomys.

Geomys.

Bathyergus.

Haplodon (*Aplodontia*,

Richardson).

Geog. distrib. South-eastern Europe, Asia, Africa and America.

VIII. MURINA. Oculi distincti, auricula et cauda plus minusve exsertæ, artus posteriores anterioribus longiores, pedes anteriores digitis 4 et verruca hallucari, posteriores 5-dactyli, cauda nuda aut minus pilosa; foramen infraorbitale longitudinale.

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supra dilatatum, infra angustatum; mandibulæ angulus rotundatus, dentes primores inferiores acuminati.

a. Molares $\frac{2}{2}$.

Hydromys.

b. Molares $\frac{3}{3}$.

a. *M. tuberculati*. β. *M. plani*, oppositi incisivi. γ. *M. alternatim incisivi*.

Mus.

Cricetus.

Dendromys.

Akodon.

Haplotis.

Pseudomys.

Mystromys.

Rhombomys.

Psammomys.

Merianes.

Euryotis.

Arvicolidæ: Sigmodontes

{ *Sigmodon*.

{ *Neotoma*.

{ *Elimodon*.

{ *Reithrodon*.

{ *Ctenodactylus*.

{ *Myodes*.

{ *Hypudæus*.

{ *Fiber*.

c. Molares $\frac{4}{3}$.

Sminthus.

d. Molares $\frac{4}{4}$.

a. *M. tuberculati*.

*Perognathus**

β. *M. plani*, incisivi.

Saccomys.

Distributed over the whole earth.

IX. CASTORINA. Corpus robustum, magnum, pedes 5-dactyli, posteriores palmati; dentes primores validi, cestiformes, molares $\frac{4}{4}$ complicati, latere altero triplicati, altero implicati.

Castor, *Myopotamus*.

Geog. distr. Northern & temperate districts of Old & New World.

Myopotamus belongs to the southern half of South America.

X. HYSTRICINA. Corpus aculeis teretibus validis, setis intermixtis vestitum; foramen infraorbitale maximum; claviculæ incompletæ; dentes molares $\frac{4}{4}$ complicati.

a. *Philogæa*.

Hystrix.

Atherura.

β. *Philodendra*.

Erethizon.

Cercolabes.

(*Syntheres* and *Sphiggurus*.)

Southern Europe, Asia, Africa and America.

XI. SUBUNGULATA. Corpus pilis tectum, cauda brevissima aut nulla, ungues subungulæformes, foramen infraorbitale permagnum, claviculæ incompletæ, dentes molares $\frac{4}{4}$.

a. Molares complicati.

Dasyprocta.

Cælogenys.

b. Molares compositi.

Hydrochærus.

Cavia.

Confined to South America.

Kerodon.

XII. DUPLICIDENTATA. Dentes primores superiores duplicati, foramen infraorbitale parvum, foramina optica conjuncta, palatum osseum singulariter coarctatum, claviculæ partim incompletæ, partim completæ.

Lepus, *Lagomys*.

Distributed over the whole earth with the exception of New Holland.

* *Dipodomys*, Gray (see vol. vii. p. 521), will perhaps be placed here.

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The new genera and species described are:—

RHOMBOMYS. Dentes primores superiores sulcati; molarium laminae obtuse rhomboideae, medio dilatatae; os interparietale transversim coarctatum; habitus murinus, cauda longa crassiuscula, dense et breviter pilosa, apice subfloccosa. This genus is founded on *Meriones robustus*. Fr. Cuvier's *Gerbille indéterminée* (Trans. Zool. Soc. ii. 2. p. 143) belongs decidedly here.

Rhombomys pallidus. Rh. supra pallide flavidus, subtus albidolutescens, auriculis parvis; cauda crassiuscula, supra isabellina, infra lutescente, apice nigro-fasciculata; dentibus primoribus superioribus bicanaliculatis.

Body	5" 6'''	Tail without hair	5" 1'''
Projecting hair.	0 6	Length of ear . . .	0 6
Hinder foot to apex of the claw	1 5		

Hab. South-eastern Russia.

MYSTROMYS. Dentes primores laeves haud sulcati, molarium lamellae (2-3) medio anfractae, parte altera paululum post alteram posita; auriculae pilosae amplae, cauda breviter et dense pilosa, mediocris, apicem versus attenuata.

M. albipes. M. subbrunneo-griseus, nigro irroratus, subtus griseo-albidus, pedibus albis, cauda supra fusca, infra albida.

Body, in straight line	4" 11'''	Body curved . . .	5" 3'''
Tail	2 4	Length of ear .	0 9½
Hinder foot with claw .	0 11½	Breadth of ear	0 7

Hab. South Africa.

Euryotis pallida, Wagn. E. supra flava, nigro intermixta, lateribus subtusque e lutescente albida; auriculis mediocribus; cauda supra nigra, basi flavida, subtus lutescente; dentibus primoribus superioribus bisulcatis, inferioribus unicanaliculatis.

The length of the largest specimen in a straight line is 5" 9"', curved 6" 1"'; of the tail, the apex of which is wanting, 2" 7"'; of the smaller specimen, the body curved = 5" 3"', tail 2" 6"'.

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Dendromys pumilio, Wagn. D. fulvus, subtus albus.

Body in straight line 2" 8"', curved 2" 11"'; tail 3" 8"'; ear 0" 5"'; front foot with claw 0" 4½"'; hinder foot 0" 8"'.

Hab. South point of Africa.

Pteromys aurantiacus, Wagn. Pt. supra aurantio-fulvus, subtus albidus, sparsim ochraceo-lavatus; patagio prope carpum in angulum acuminatum excurrente, cauda plana, disticha, castanea.

Body 5" 10"'; tail somewhat mutilated 4" 3"'; ear 0" 5"'.

Hab. Island of Banca.

Lepus Mediterraneus, Wagn. L. timido multo minor, auriculis capite longioribus, medio nudiusculis, apice nigris; nucha artubusque ochraceo-rufescentibus, cauda supra nigra, infra albida, stria alba post oculos.

Body in straight line	13" 6'''	Curved	15" 5'''
Head	3 5	Ears	4 3
Tail with hair about	3 0	Ear-fissure .	3 8

Hab. Sardinia, Gibraltar ?

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Projecting hair.	0 6	Length of ear . . .	0 6
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Body 5" 10"'; tail somewhat mutilated 4" 3"'; ear 0" 5'''.

Hab. Island of Banca.

Lepus Mediterraneus, Wagn. L. timido multo minor, auriculis capite longioribus, medio nudiusculis, apice nigris; nucha artubusque ochraceo-rufescentibus, cauda supra nigra, infra albida, stria alba post oculos.

Body in straight line	13" 6'''	Curved . . .	15" 5'''
Head	3 5	Ears	4 3
Tail with hair about	3 0	Ear-fissure .	3 8

Hab. Sardinia, Gibraltar?

8. 'On the Genera and Species of the *Comatula*,' by Joh. Müller, which terminates the present part.

In concluding this notice, we may express the wish that the various parts may appear with more regularity than heretofore.

W. FRANCIS.

The Naturalist's Library: Mammalia. Vol. xi. *Marsupialia, or Pouched Animals.* By G. R. Waterhouse, Esq., Curator to the Zool. Soc. Lond.

THE eleventh volume of this valuable and deservedly popular work, containing a history of the 'Marsupialia, or Pouched Animals,' has just appeared. The confusion in which the Marsupials have been hitherto involved, renders a volume exclusively devoted to them peculiarly interesting; the author of the work being an able naturalist and possessing abundant facilities for the successful prosecution of his labours, of which he has availed himself with great acumen and industry in the execution of his task.

Mr. Waterhouse commences by an Introduction, in which a concise review is taken of the history of the Marsupialia from the time of Linnæus to the present day, in which the views of various naturalists are examined,—a preliminary step to an exposition of the principles by which he is guided in the arrangement of these singular mammals. The point at issue between some naturalists of great eminence—namely, whether the Marsupialia constitute a natural group, of which the component parts are linked together by such bonds of structural relationship as cannot be dissolved with propriety, or whether the group is unnatural, its assumed component parts belonging, in truth, to other orders—is discussed with great clearness.

Cuvier, Geoffroy St. Hilaire, De Blainville, and Owen, celebrated no less for anatomical than for zoological knowledge, insist upon the former position. Among their opponents are Storr, Illiger, Swainson, and Ogilby. After detailing the arguments of these scientific men, and giving the results of his own analysis of the Marsupials, which he considers as forming a natural order, Mr. Waterhouse, alluding to Mr. Swainson's erroneous assertions, "that *nearly* all our leading naturalists have acknowledged the artificial nature of the assemblage," thus writes: "I think we might, on the other hand, say with safety, that all the most eminent anatomists (these being at the same time zoologists) agree in uniting them I could wish, however, that this important question should not rest upon *authority*;—but to go through the train of reasoning by which the anatomists have arrived at their conclusions, would require more space than can be spared in a volume like the present."

"It has often been stated that the Marsupialia consist of animals of most dissimilar organization, and are united together only by a single peculiarity; however little weight some zoologists may attach to this single peculiarity, its value was almost immediately appreciated by the anatomists and physiologists. But I will now proceed

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Mr. Waterhouse next enters into an examination, brief but still satisfactory, of their structural peculiarities, in which he refers to the labours of Professor Owen and others who have thrown so much light upon them. With respect to the mode in which the species are worked out, we cannot speak too highly. In the instances (and they are not few) where a confusion of synonyms has perplexed the inquirer, we find the knot unravelled; and though, in many cases, names given by modern naturalists to old and previously described species must sink, we feel assured that the imposers themselves of these names will rejoice, so that science be but benefited. The descriptions are full and clear; nearly all of them, indeed, says the author, were "carefully drawn up by myself from the original specimens contained either in the museum at Paris, the British Museum, or that of the Zoological Society*."

We cannot conclude our notice of the present really valuable contribution to natural history without referring to the plates. These, to the number of thirty-four, are faithful delineations of the species represented, and are at once effective and artistical.

PROCEEDINGS OF LEARNED SOCIETIES.

ROYAL SOCIETY.

May 20, 1841.—The following papers were read, viz.—

1. "Catalogue of Geological Specimens procured from Kerguelen's Land during the months of May, June, and July, 1840."
2. "Catalogue of Birds collected on board Her Majesty's Ship *Terror*, between the Cape of Good Hope and Van Diemen's Land."
3. "Description of Plants from Kerguelen's Land, collected in May, June, and July, 1840."

The above papers are by John Robertson, Esq., Surgeon of Her Majesty's Ship *Terror*, and were presented to the Society by the Lords Commissioners of the Admiralty, and communicated by the President of the Royal Society.

4. "On the Fossil Remains of Turtles discovered in the Chalk Formation of the South-East of England." By Gideon Algernon Mantell, Esq., LL.D., F.R.S.

In this paper, the author gives a description, accompanied with drawings of a remarkable fossil Turtle, referable to the genus *Emys*, and named from its discoverer, Mr. Bensted, the *Emys Benstedii*, which has been lately found in a quarry of the lower chalk of Kent,

* And here it may be observed, that the number of species at present known, all of which are described in the volume before us, amounts to ninety-seven. Desmarest, in his 'Mammalogie' (1820), has characterized only forty-three.

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